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1. The following compendium of information is based on the interrogation of a number of German medical officers and medical department personnel using as a basis a questionnaire prepared by Medical Section, 12th Army Group in conjunction with this office. Twenty questions were propounded and the answers to these questions are consolidated below. In each instance the question is re-stated first.

- a. Q--What types of wounds are most frequently seen among the German casualties? Head? Chest? Abdomen? Extremities? Percentage of each?

A--It seemed to be the consensus of opinion among German medical officers that wounds of the extremities are most common. Only one would state percentages, indicating that probably fifty per cent were wounds of the extremities, with casualties in the other three categories being equally divided. Another indicated that chest and head wounds appeared to be more common than abdominal wounds.

- b. Q--What weapons appear to be causing most of the casualties and what is the order of their importance?

A--One group of medical officers indicated that approximately eighty per cent of German battle casualties arise as a direct result of artillery and mortar fire while the remaining twenty per cent were due in large part to machine gun and other small arms fire. Another medical officer believed that aircraft bombardment was especially likely to inflict casualties and placed these as exceeding casualties from artillery and mortar fire. There was apparently no attempt at differentiating between casualties to be expected from various types of warfare, and each officer based his opinion on his own experience. One officer placed bombs as least important since he had encountered these least often. One prisoner of war believes that anti-personnel artillery shells have caused most German casualties. He states that such shells with percussion fuses are more effective against men in fox holes but that when men are in the open, time fuses should be used so that the shells will burst approximately fifteen feet overhead.

- c. Q--What communicable diseases have occurred in significant numbers among German troops?

A--With the exception of the usual amount of respiratory infection there has been apparently no real disease problem among troops on the Western front. A considerable amount of dysentery has been seen usually occurring in small localized outbreaks--none of these has been considered serious. Cases of infectious jaundice have been seen by nearly all medical officers questioned but the disease on the Western front has never assumed the importance it had on the Eastern front. Exanthematic typhus is mentioned as occurring among German troops on the Eastern front but up to the present time it has not appeared on the Western

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front in the areas in which these PW's were located. Influenza has not been reported among German troops on the Western front. (Note: Information from other sources indicates that influenza has been present in prisoners of war in the Balkan areas and that the disease is present among civilians in Southern Germany and in Austria. In the latter areas it is reported to be reaching the epidemic stage.)

- d. Q--What is the status of German medical supplies? What classes of items are in critical shortage? Any substitutes?

A--Aside from a few prisoners of war stoutly maintaining that the German Supply system was satisfactory, it was generally agreed that one of the principal shortages so far in evidence is narcotics, especially morphine, codein and the barbiturates. There are, however, adequate quantities of evipan, which is used as an intravenous anesthetic. Bandages are critically short and considerable use is made of mull and paper bandages. Sulfa drugs, including the special German preparation Marfanil-prontalbin, have become increasingly difficult to obtain. Iodine has been largely replaced with a substitute antiseptic known as Sepso-tinktur, which is apparently a mercurial preparation. Insulin and other types of hormone preparations also are in short supply. (Note: Additional shortages that are known to exist include ethyl ether, arsenic and bismuth preparations, ointment bases and rubber articles. In addition there is evidence of a gradual deterioration in the quality of medical instruments furnished to the German army in the field.)

- e. Q--What recent developments in medical treatment or surgical procedures as applied to field medicine are considered outstanding?

A--The one outstanding development which the majority of German medical officers attribute to German medicine is the development of the sulfa drugs. They mention its use in the treatment of sepsis and meningitis. Also mentioned was a polyvalent vaccine marketed under the trade name of Viorfach-Impfstoff, effective against typhoid, paratyphoid and cholera. (See Medical Intelligence Summary No. 16.) The only surgical procedure mentioned was the rule of the German army forbidding closure of the stump following amputations. German medical officers believe that this has been instrumental in helping to avoid gas gangrene in these cases. If any other achievements exist in the field of medicine, they are unknown to this group of doctors.

- f. Q--What treatment has been devised for infectious jaundice?

A--No specific treatment for infectious jaundice is known to any PW's who were questioned. High carbohydrate, high protein and low-fat diets were generally used together with intravenous glucose. Drugs mentioned as being useful in the treatment of jaundice were as follows:

- (1) Campolon -- a non-specific therapeutic agent generally designated as a "pick-up" medicine.
- (2) Gallentreibo -- a cholagogue.
- (3) Darmdesinfizierungsmittel -- intestinal disinfectant.

- g. Q--What are the incidences of neuropsychiatric conditions and combat exhaustion in the German army? Methods of treatment?

A--All PW's agree that neuropsychiatric cases are relatively infrequent in the German army. Many of them indicate that they have seen very few cases during their service on the Western front. None are aware of any new methods of treatment. There is some difference of opinion as to the prevalence of combat exhaustion. One PW states that it is frequent and another that it is rare. Severe cases of combat exhaustion are sent to reservelazarette but the majority are treated within the army area in an attempt to return them to full duty. None of the PW's were familiar with any new methods of treatment or management of combat exhaustion. Sedation was believed to be the common approach.

h. Q--What are German methods, procedures and means of controlling louse infestation in military personnel and civilian population? What are the agents used?

A--In controlling louse infestation in the German army, the principal reliance appears to be placed on frequent physical inspection and by the use of steam sterilization of clothing. Since steam is not always available, various types of anti-louse powder are also recommended. Those mentioned by PW's were as follows:

- (1) Russland Pudor. (? Russla)
- (2) Lausetum. (? Lauseto)
- (3) Flores Pyrethri.

These powders were described by PW's as being fairly effective. Impregnation of clothing was known to some medical officers, who stated that a solution of Lauseto in water was used for this purpose. The duration of effectiveness of this impregnation is variously given as from eight days to four months. Several PW's mention the use of an oily liquid known as Cuprox (solution of copper sulphate in an organic solvent) as very effective in eliminating lice. All PW's stated that the powders were not entirely satisfactory and one or two suggest that they were objectionable. None know of any special methods of control of louse infestation as applied to the civilian population. Steam disinfection is used for civilians, apparently in combination with the various methods described above. (Note: Additional anti-louse powders, which have been discovered in captured German medical supplies include Pereat and Dolicia. Samples of all these powders have been made available for study in the United States.

i. Q--What is the incidence of trench foot, immersion foot and similar conditions due to cold and dampness? What are the methods of prevention and treatment?

A--The German PW's interrogated appear to have little knowledge of true trench foot. Some described a condition due to infrequent bathing, which resulted in the formation of blisters and pustules on the foot. These were treated with various antiseptics and ointments. The one medical officer who appeared to understand what was meant by the term "trench foot" indicated that while the disease had been fairly frequent on the Eastern front, it was much less common on the Western front. He indicated that it was a common experience to find that individuals previously affected were more susceptible to its development following exposure. Another medical officer stated his belief that the small amount of trench foot in the German army was due to the fact that during the winter months on the Western front, a large share of their fighting had been in prepared defensive positions.

j. Q--What use, if any, is being made of captured U. S. personnel and equipment in medical installations?

A--All PW's state that full use is made of any U. S. medical supplies and equipment which fall into their hands. They are accepted without question and used on the same basis as German medical supplies. This is in contradistinction to the German regulations regarding certain other captured medical material, especially that of Italian origin. PW's state that American medical personnel ordinarily are used in the care of American wounded, although in times of emergency, all medical resources may be pooled. Another states that while captured medical personnel are not forced to work, the majority volunteer. All insist that Geneva Convention regulations are lived up to in these matters. One PW states that American medical personnel in German medical installations receive better treatment than German medical personnel in American installations.

k. Q--Has trench fever (Wolhynian fever) made its appearance among German troops? Methods of prevention and treatment?

A--None of the PW's questioned have any knowledge of the appearance of trench fever on the Western front. It is stated to have occurred on the Eastern front sometimes in severe outbreaks.

l. Q--What use, if any, is being made of penicillin in the German army? What is the supply status?

A--Some PW's have never heard of penicillin and all agree that none has ever been used in the German army. (Note: Early in November 1944 the Heeresarzt (Army Surgeon) of one of the German armies issued a secret order to all subordinate medical units. The order stressed the importance of capturing penicillin, supposedly for disinfection of burns. In addition the order stated that all captured British and American medical supplies were to be checked for the presence of penicillin and if any were found it was to be sent to the Army Surgeon by the quickest route.

m. Q--How great a shortage of medical officers is the German army now experiencing? What are the educational and training qualifications of replacements? Length of time of medical schooling and medical curriculum?

A--There seems to be fairly general agreement that a shortage of trained medical personnel exists in the German army. There is some disagreement as to the actual seriousness of the shortage but the strain is apparent from the quality and type of medical officer replacements. On a numerical basis front line troops and army medical installations appear to have suffered least, while many of the general hospitals in Germany have suffered most. From the standpoint of quality, however, the greatest difficulty is being encountered in obtaining adequate replacements with sound medical and surgical knowledge for work in army areas and installations. Many military hospitals in the Reich are staffed with civilian physicians and nearly all appear to be short of personnel. There is considerable disagreement as to the present curriculum in German medical schools. All agree that the course has been shortened considerably and that it is less efficient. The normal German curriculum of ten semesters covering a period of five years has been considerably shortened. The number of semesters is stated to have remained approximately the same but the length of each is now between three and five months, according to different reports. In some instances the total elapsed time of formal medical education is reduced to as little as $2\frac{1}{2}$ years. Internships are no

longer served in hospitals but rather in the army. All medical students while in their universities are in student companies subject to military discipline. At various times between semesters they are required to serve in the army first as soldiers and later as sanitary NCO's and officers. When the medical student first enters the army, he goes through ordinary infantry training and is then transferred to the medical service. He goes through the ordinary promotion scale of non-commissioned officers and assumes officer status only after he becomes a qualified physician. Ranks of medical officers in the army and their corresponding military ranks are as follows:

(1)	<u>Assistentarzt</u>	- Second Lieutenant.
(2)	<u>Oberarzt</u>	- First Lieutenant.
(3)	<u>Stabsarzt</u>	- Captain.
(4)	<u>Oberstabsarzt</u>	- Major.
(5)	<u>Oberfeldarzt</u>	- Lieutenant-Colonel.
(6)	<u>Oberstarzt</u>	- Colonel.
(7)	<u>Generalarzt</u>	- Major-General.
(8)	<u>Generalstabsarzt</u>	- Lieutenant General.
(9)	<u>Generaloberstabsarzt</u>	- General.

The term Hilfsarzt is often used in connection with medical officers assigned to various units. This is not a rank but an appointment. Thus, a surgeon may be only a medical NCO but because of his professional qualifications, he may be the senior surgeon of his unit. He is then called a Hilfsarzt but his military powers are only those of his military rank. None of the PW's furnished any information as to the actual curriculum in German medical schools.

n. Q--What percentage of casualties are burns? What proportion are caused by (1) white phosphorus and (2) flame throwers? What is the German method of treatment of these types of burns?

A--There is no agreement among PW's as to the relative percentages of burns caused by white phosphorus and flame throwers. Some stressed the frequency of white phosphorus burns while others had treated only flame thrower burns. It was not stated whether this was due to the type of fighting encountered in different sectors. Burns due to flame throwers were stated to be generally severe and painful. Such burns were treated a number of different ways, none of which were given in detail but all of which appear to differ very little from ordinary methods of treatment. Tannic acid, salves and pressure bandages are mentioned by different PW's. No mention was made of dyes or of the use of sulfonamides in any form. None of the PW's described treatment except in very general terms. In case of white phosphorus burns several of the PW's were familiar with the now standard German remedy of kaolin in 1 per cent copper sulphate solution. Such burns are cleaned and burned parts kept moist with the copper sulphate solution until all particles of white phosphorus have been removed. Other PW's had no knowledge of the use of copper sulphate solution and merely suggested keeping the burn moist at all times. (Note: The German copper sulphate solution is somewhat weaker than that normally employed for the treatment of white phosphorus burns, but its effectiveness is increased by the addition of a solid to keep the solution in contact with the burn for a longer period of time.) (See also para. 1, Penicillin).

o. Q--What new biologicals, both for prophylaxis and treatment have been developed? Is there a vaccine for influenza?

A--None of the PW's had any knowledge of any developments in the field of vaccines and biologicals. None knew of the existence of a new vaccine for influenza.

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p. Q--What is the incidence of gas gangrene? What is the method of treatment?

A--Again PW's have little or no knowledge of the actual incidence of gas gangrene. The majority of them, having been engaged in front line medicine, have seen relatively little. In regard to treatment, they mention the use of gas gangrene anti-toxin but state that it is frequently used too late and that radical surgery is the usual treatment employed. (Note: From other sources it has been learned that gas gangrene is fairly common in German hospitals and that considerable dependency is placed on radical surgery in the treatment of the disease.

q. Q--What is the incidence of venereal disease in the German army? What are the methods of control and treatment?

A--No statistics could be given regarding the incidence of venereal disease among German soldiers except to state that gonorrhea was the most frequent and that incidence was usually highest in garrison areas. These PW's could add nothing to what is already known of German methods of control. Sulfonamides are used extensively in the treatment of gonorrhea but there have been no new developments in the treatment of syphilis.

r. Q--What percentage of female personnel in hospitals are graduates of recognized schools for nurses' training? What percentages are nurses' aides.

A--Approximately forty per cent of female nursing personnel are estimated to be graduates of recognized nurses' training schools. The other sixty per cent are composed both of nurses' aides and Red Cross personnel although in some instances Red Cross nurses may be classified as trained personnel. The German terms generally employed for these categories are as follows:

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| (1) <u>Kranken Schwestern</u> | -- Trained Nurse. |
| (2) <u>Hilfsschwester</u> | -- Nurses' Aide. |
| (3) <u>Schwester der DRK</u> | -- Red Cross Nurse. |
| (4) <u>Krankenhelferinnen</u> | -- Auxiliary Nurses' Aide. |

s. Q--What percentage of German medical officers are in purely administrative positions? Are medical officers replaced in these positions by administrative personnel wherever possible?

A--PW's are generally of the opinion that medical officers are seldom used in purely administrative positions except at army level. Most believe that every attempt is made to replace medical officers who are in administrative positions.

t. Q--Is the Red Cross brassard and other markings used by American medical personnel easily visible to German troops in the line during operations?

A--Red Cross markings on helmets are clearly visible but some difficulty is experienced with the Red Cross brassard worn on the arm. The Germans recently have employed a large piece of material emblazoned with Red Crosses which is tied onto the chest, front and back. Some of the German officers freely admitted that under certain conditions of poor visibility, inadvertent violations of the Geneva Convention had occurred on both sides.

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